

REMARKS

35 U.S.C § 103

The Examiner rejected claims 3, 11-20, 22-30, 32 and 33 under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 6,645,651 to Hockaday et al. ("Hockaday") in view of U.S. Patent No. 5,069,793 to Kaschemekat et al. ("Kaschemekat").

The Examiner rejected Claim 4 under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of U.S. Patent No. 5,681,467 to Solie ("Solie").

The Examiner rejected Claims 21 and 31 under 35 U.S.C. 103(a) as being unpatentable over Hockaday in view of Kaschemekat as applied to claims 11 and 24 above, and further in view of U.S. Patent No. 6,207,369 to Wohlstadter ("Wohlstadter").

Claim 11

The Examiner states:

Hockaday as discussed above is incorporated herein and U.S. Pre-Grant Publication No. 200110049045 further teaches the use of methanol-impermeable coatings on housing walls (paragraph [0041]).

Hockaday does not teach that the composite membrane has a coating of a methanol-impermeable material on one surface.

Kaschemekat teaches a spirally wound multi layer composite membrane comprising a porous substrate (i.e. web), a membrane disposed on a first surface of the substrate (i.e. microporous substrate membrane) and a coating that is a permselective polymer on the other surface of the substrate and said multi layer composite membrane can be a plurality of membranes (column 1, lines 11-52, column 10, lines 33-64 and example 1). Kaschemekat further teaches that different polymers can be chosen for their specific selectivity.

Applicant contends that Hockaday and Kaschemekat, alone or in combination, do not teach or suggest each and every feature of independent claim 11. The Examiner agrees that Hockaday does not teach that the composite membrane has a coating of a methanol impermeable material on one surface and relies on Kaschemekat to teach this limitation. Applicant disagrees and contends that Kaschemekat taken separately or in combination with

Hockaday also neither describes nor suggests each and every feature of the methanol impermeable material coating, as arranged in independent claim 11.

For example, Kaschemekat fails to teach or suggest a polymer membrane disposed over a first surface of the porous substrate and a coating of methanol impermeable material disposed over an *opposite* surface of the substrate. With respect to Kaschemekat, the Examiner contends that the support web is the porous substrate and the microporous substrate membrane is the polymer membrane disposed over the first surface of the "porous substrate." The permselective polymer in Kaschemekat that the Examiner contends is the methanol impermeable material is coated onto the microporous substrate membrane and not on the opposite side of the support web. That is, Kaschemekat describes:

Preferred embodiments of the invention employ a multilayer membrane comprising a microporous substrate membrane on a support web, with an ultrathin layer of the permselective polymer coated onto the microporous substrate.¹

Further, none of the layers in the membrane described by Kaschemekat is methanol impermeable. Rather, it is necessary for both the support web and the permselective polymer membrane to be methanol permeable in order for the membrane module of Kaschemekat to function. The Examiner cites column 1, lines 11-52 of Kaschemekat to disclose the composite membrane of the present application. However, in part of the cited portions, Kaschemekat states:

A liquid mixture contacts one side of a membrane; the permeate is removed as a vapor from the other side. The transport through the membrane is induced by the difference in partial pressure between the liquid feed solution and the permeate vapor.²

The above quoted part from Kaschemekat clearly shows that both sides of the membrane described in Kaschemekat are required to be permeable to methanol either in a liquid or a vapor state. Therefore Kaschemekat teaches away from the features recited in independent claim 11.

¹ Kaschemekat, Col. 10, lines 36-40

² Kaschemekat, Col. 1, lines 13-18

Applicant submits that independent claim 11 is patentable for at least the reasons mentioned above.

Claims 12-20 and 21-23 are patentable for at least the reasons for which claim 11 is patentable.

Claim 24

Claim 24 is patentable for at least similar reasons mentioned with respect to claim 11. Claims 25-30 and 31-33 are patentable for at least the reasons for which claim 24 is patentable.

35 U.S.C § 102

The examiner rejected Claims 1, 2 and 5-10 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,645,651 to Hockaday ("Hockaday").

Claim 1

The examiner states:

Hockaday ('651) teaches a fuel cartridge comprising a housing 7 with a fuel egress 4 (i.e. exit port) supported by and connected to the housing and a selectively permeable membrane (2, 8 and 12) in the housing 7 (figures 1 and 2, column 3, lines 55-64, column 5, line 1 - column 6, line 59, column 7, lines 49-50 and column 8, line 24 - column 9, line 40). Hockaday further incorporates the fuel Ampoule of the commonly assigned U.S. Pre-Grant Publication No. 2001/0049045 by reference and that U.S. Patent No. 6,645,651 is an improvement upon said fuel ampoule by adding an additional fuel source inside of a fuel cartridge to the previously known fuel ampoule,...

Applicant disagrees that Hockaday discloses each and every feature of Claim 1 as arranged in the claim. However, in order to move prosecution forward, Applicant has amended claim 1 to recite "a surface area enhanced planar vaporization membrane disposed in contact with the housing of the fuel cartridge." Applicant contends that Hockaday neither describes nor suggests at least this feature of independent claim 1.

Hockaday incorporates the fuel Ampoule of the commonly assigned U.S. Pre-Grant Publication No. 2001/0049045 by reference, and the Examiner states:

...the previous fuel ampoule of U.S. Pre-Grant Publication No. 2001/0049045 is disclosed as having the following structure; a multilayer composite vaporization membrane 8 and 12, having a cylindrical shape (figures 1 and 3), disposed about a substantial portion of an interior of the housing, that has a selective permeability to allow vaporization of liquid methanol (paragraph [0052]) (i.e. as recited in claim 5) said cartridge also containing a carbonaceous compound (paragraph [0023]), said membrane comprising silicone or silicone impregnated into fiberglass cloth or polyester film, said membrane further comprising a porous substrate made of polyurethane (paragraph [0050]) (see also paragraphs [0014]-[0056]).

Applicant disagrees and contends that U.S. Pre-Grant Publication No. 2001/0049045 is not understood to disclose a surface area enhanced planar vaporization membrane disposed in contact with the housing of the fuel cartridge. Neither element 8 nor element 12 of U.S. Pre-Grant Publication No. 2001/0049045, as cited by the Examiner, is understood to be a surface area enhanced planar vaporization membrane disposed in contact with the housing of the fuel cartridge. Rather, element 8 is the ampoule wall while element 12 is simply a support material. As Hockaday '045 mentions:

The ampoule wall 8, 9 may be constructed from pure silicone rubber.³

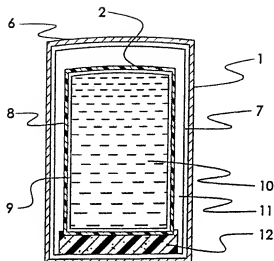
...

A support material 12 may be inserted between the walls of the outer can or container 1 and the ampoule 2 to provide padding.⁴

Assuming *arguendo* that element 8 was conceived to be a planar vaporization membrane, U.S. Pre-Grant Publication No. 2001/0049045 still fails to teach or suggest each and every feature of independent claim 1. Fig. 2 of U.S. Pre-Grant Publication No. 2001/0049045, reproduced below, clearly shows that element 8 is not in contact with the housing of the ampoule. Therefore, Hockaday, whether alone or in combination with U.S. Pre-Grant Publication No. 2001/0049045, fails to teach or suggest each and every feature of claim 1, as amended.

³ U.S. Pre-Grant Publication No. 2001/0049045, paragraph [0050]

⁴ U.S. Pre-Grant Publication No. 2001/0049045, paragraph [0053]



Therefore, claim 1 is patentable for at least the reasons mentioned above. Claims 2 and 4-10 are patentable for at least the reasons for which claim 1 is patentable.

Double Patenting

Claims 1-8, 10 provisionally rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over claims 1-6, 8 and 12 of copending Application No. 10/664,405. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant invention fully encompass the scope of the claims in copending Application No. 10/664,405; the only difference is the claims in copending Application No. 101664,405 further limit the structure by adding either a heating element or a bladder and piston arrangement.

Claims 1-3, 5-8 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 6-9, 11 and 12 of copending Application No. 10/664,818. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both applications just use different words to claim the same thing.

Applicant traverses this rejection and contends that claims 1-8 and 10 are directed to non-obvious variants of claims 1-6, 8 and 12 of copending Application No. 10/664,405 for instance the claims of the co-pending application require e.g., a heat producing element and/or a piston that is urged against a bladder, which is neither anticipated nor obvious in view of the pending claims.

As for claims 1, 2, 6-9, 11 and 12 of copending Application No. 10/664,818, those claims include the feature of the housing having at least a portion of a wall of the housing being comprised of a thermally conductive material, which is neither anticipated nor obvious in view of the pending claims.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing remarks, applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Applicant : Javit A. Drake et al.
Serial No. : 10/664,822
Filed : September 16, 2003
Page : 15 of 15

Attorney's Docket No.: 08935-0297001 / M-5031/Z-
03463

Please apply the \$130 for the Petition for Extension of Time fee and any other charges
or credits to deposit account 06-1050.

Respectfully submitted,

Date: December 10, 2008

/Denis G. Maloney/
Denis G. Maloney
Reg. No. 29,670

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (877) 769-7945

22057656.doc